REMARKS

Claims 1-3, 5-11, 14-24, 26-32 and 34-41 are now pending in this application. Claims 1, 2, 22 and 23 are independent. Claims 1, 2, 22, and 23 have been amended, no claims have been added, and claims 4 and 25 have been canceled by this Amendment. All dependent claims in this application are multiply-dependent claims.

No new matter is involved with any claim amendment, as the amendments to the claims merely incorporate previously-considered dependent claim subject matter into the respective independent claims.

Legal and Administrative Oversight in the Non-Final Office Action

In view of the legal and administrative inconsistencies of the Non-Final Office Action at page 2, paragraphs 2 and 3, with respect to the explicit statement of the rejection of claims 1-10, 18, 22-31, 34, and 37-38, Applicant requests that a new action correcting and clarifying the rejections of these claims in the official record be provided for the benefit of the Board of Appeals and Patent Interferences if a Notice of Allowability is not forthcoming in response to this Amendment.

This inconsistency remains essentially unchanged since it was first pointed out by Applicant in the arguments previously submitted with the Pre-Appeal Brief Conference Request in connection with the now withdrawn rejection by Muller in view of Rick.

The explicit statement of the rejection states that the claims 1-10, 18, 22-31, 34, and 37-38 are "anticipated" by Muller in view of Hosur et al. under "35 U.S.C. 102(e)". It appears that the Examiner may have intended to invoke an unpatentability rejection under §103(a). Accordingly, since the explicit statement of the rejection is legally erroneous and the record unclear, a new action clarifying the legal basis for the rejections is requested before proceeding to the Board of Appeals.

In the interests of expediting prosecution of this application, Applicant notes that the arguments presented in this Amendment are addressed under the assumption that an unpatentability rejection under 35 U.S.C. §103(a) was intended by the Examiner.

Furthermore, the rejection of claim 14 is not addressed in the explicit statement of the rejection in paragraph 3 of the Office Action, however claim 14 is addressed in the detailed rejection on page 7. For the purposes of this Amendment, Applicant further assumes that claim 14 stands rejected under 35 USC §103(a) by Muller in view of Hosur et al. Clarification of this point is also requested.

Unpatentability Rejection over Muller in view of Hosur et al.

Withdrawal of the rejection of claims 1-10, 18, 22-31, 34 and 37-38 under 35 U.S.C. §103(a) as being unpatentable over Muller (US 6,490,461) in view of Hosur et al. (US 6,977,910) ("Hosur") is requested.

Applicant notes that, to establish a *prima facie* case of obviousness, three basic criteria offer useful insights. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference must teach or suggest all the claim limitations.[1] Further, the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure.[2] The Supreme Court recently held that it is necessary, *inter alia*, for a court to look to interrelated teachings of multiple patents in order to determine whether there was an apparent reason to combine the known elements in the claimed. In this regard, the Court held "[t]o facilitate review, this analysis should be made explicit."[3] "[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness."[4] The legal requirements set forth above have not been met, particularly by the claims as presently amended.

[1] *See* MPEP §2143.
[2] *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991) and *See* MPEP §2143.
[3] *KSR Int'l. Co. v. Teleflex Inc.*, 550 U.S. ___ (2007) (*see* p. 14).
[4] *See Id.*, citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006).

Discussion of Applicant's Disclosure

By way of background, one or more embodiments of Applicant's disclosure is directed to a method and arrangement for implementing power control in a connection between two transceivers in which the method includes receiving frame-structured signal sent from the first transceiver using the second transceiver, decoding the received signal in a decoder of the second transceiver, wherein the decoder provides an estimate concerning the reliability of the signal in the output. The estimated reliability or the parameter modeling the reliability is compared to a particular given threshold value, and the transmission power of the first transceiver is adjusted by the second transceiver by signaling power control information to the first transceiver so that the estimated reliability is as close as possible to the given reliability.

The novel and non-obvious solution of Applicant's claimed invention calculates the power control information on the basis of the estimated reliability and may also provide step-wise power control. In further aspects, an estimate of at least one probability measure distribution is generated using the probability measures of several received frames, and the power control information is calculated on the basis of the estimated probability.

Discussion of Müller

According to the Abstract, Müller purportedly relates to a wireless telecommunications system in which mobile station power control is affected by a functional combination of signal-to-interference sampling, bit error rate sampling, and frame error rate sample. The signal-to-interference sampling allegedly provides rapid power control adjustment, while the bit error rate and frame error rate factors provide less speedy but better power control adjustment. The power control function allegedly has applicability in single link and multiple link power control adjustments.

Further, and as stated in previous responses, Müller utilizes conventional methods of FER estimation, *i.e.*, "measurements can follow standard kinds of frame error rate measurements (see col. 5:26-27)". Although Müller mentions the ***concept*** of soft decisions (see col. 4:50-51), Müller does not utilize soft decisions at all, including the claimed use of a soft decision estimate relating to the reliability of the signal, and certainly does not estimate the error probability for a

given number of bits in a frame for the received signal on the basis of the soft decisions provided by a decoder.

In fact, ***the Examiner admits this deficiency of Müller*** on pate 3 of the Office Action with respect to claim 1, *i.e.*, that Müller does not teach or suggest estimating the error probability for a given number of bits in a frame for the received signal on the basis of soft decisions provided by the decoder. The Examiner also asserts that Hosur makes up for the admitted deficiency by teaching estimating an error for a given number of bits for a received signal on the basis of soft decisions by a Viterbi decoder (see Hosur at col. 6:37-44).

Furthermore, Müller appears to teach averaging multiple frames when calculating the frame error rate (FER) (see col. 5:14-20), but Müller clearly does not teach or suggest calculating a ***probability distribution*** over several frames, contrary to the Examiner's assertion with respect to claims 2 and 23.

Finally, Müller also does not teach or suggest the use of step-like power control commands signaled to a first transceiver such that ***the step size depends on the estimated reliability*** as previously claimed in dependent claims 4 and 25, for example. Instead, Müller merely teaches the following at col. 5:26-36:

> FER measurements can follow standard kinds of frame error rate measurements including, for example, CRC calculation and comparisons. If the CRC does not match, a frame error is recorded. A predetermined number of consecutive frame errors (or some other protocol of repetitious frame errors) indicates inadequate transmission power. CRC errors affect the E_b/I_o target at step 106, typically, but may also directly cause a power increase order to be issued. Accordingly, at step 103, ***the mobile station may be instructed to increase transmission power by some increment, e.g., 1 dB***.
>
> (***Emphasis*** added)

Clearly, Müller does not teach or suggest the limitations of previously-presented claims 4 and 25.

Discussion of Hosur

According to the Abstract, Hosur is purportedly directed to a power control circuit with space-time transmit diversity in which a measurement circuit is coupled to receive a first input signal from a first antenna of a transmitter and coupled to receive a second input signal from a second antenna of the transmitter. Each of the first and second signals is transmitted at a first time, and the measurement circuit produces an output signal corresponding to a magnitude of the first and second signals. A control circuit is coupled to receive the output signal and a reference signal. The control circuit is arranged to produce a control signal at a second time in response to a comparison of the output signal and the reference signal.

In Hosur, the Viterbi output appears to be connected directly to a FER measurement circuit such that the FER estimate is calculated on the basis of decisions provided by a decoder. However, similar to Müller, Hosur does not teach or suggest the use of step-like power control commands signaled to a first transceiver such that the step size depends on the estimated reliability.

Specific Deficiencies of the Applied Art

Independent Claim 1

Neither Müller nor Hosur, either alone or in combination, teach or suggest a method for implementing power control on a connection between two transceivers wherein the method includes, *inter alia*, "...decoding the received signal in a decoder of the second transceiver, the decoder providing a soft decision estimate concerning the reliability of the signal in the output thereof...adjusting the transmission power of the first transceiver in the second transceiver by signalling power control information to the first transceiver so that the estimated probability is as close as possible to the given probability, wherein the power control information is calculated on the basis of the estimated probability, and ***wherein the power control information signalled to the first transceiver comprises step-like power control commands configured such that a step size depends on the estimated reliability***," as recited in independent claim 1, as amended (***emphasis*** added).

Independent Claim 2

Furthermore, neither Müller nor Hosur, alone or in combination, teach or suggest a method for implementing power control on a connection between two transceivers, wherein the method includes, *inter alia*, "...decoding the received signal in a decoder of the second transceiver, the decoder providing a soft decision estimate concerning the reliability of the signal in the output thereof...adjusting the transmission power of the first transceiver in the second transceiver by signalling power control information to the first transceiver so that the estimated probability is as close as possible to the given probability, ***wherein an estimate of at least one probability measure distribution is generated using the probability measures of several received frames, and the power control information is calculated on the basis of the estimated probability, and wherein the power control information signalled to the first transceiver comprises step-like power control commands configured such that a step size depends on the estimated reliability***," as recited in independent claim 2, as amended (***emphasis*** added).

Independent Claim 22

In addition, neither Müller nor Hosur, alone or in combination, teach or suggest an arrangement for implementing power control on a connection between two transceivers, wherein, in the second transceiver, the arrangement includes, *inter alia*,"...means for decoding the received signal, the means being arranged to provide a soft decision estimate concerning the reliability of the signal in the output thereof...means for adjusting the transmission power of the first transceiver by forming and signalling power control information to the first transceiver so that the estimated probability is as close as possible to the given probability...and means for calculating the power control information on the basis of the estimated probability, ***wherein the means for calculating the power control information signals step-like power control commands to the first transceiver such that a step size depends on the estimated signal reliability***," as recited in independent claim 22, as amended (***emphasis*** added).

Independent Claim 23

Finally, neither Müller nor Hosur, alone or in combination, teach or suggest an arrangement for implementing power control on a connection between two transceivers, wherein,

in the second transceiver, the arrangement includes, *inter alia*,"...means for decoding the received signal, the means being arranged to provide a soft decision estimate concerning the reliability of the signal in the output thereof...***means for generating an estimate of at least one probability measure distribution using the probability measures of several received frames, and means for calculating the power control information on the basis of the estimated probability, wherein the means for calculating the power control information signals step-like power control commands to the first transceiver such that a step size depends on the estimated signal reliability***," as recited in independent claim 23, as amended (***emphasis*** added).

Accordingly, since the applied art does not teach or suggest all the claimed limitations, reconsideration and allowance of independent claims 1-2 and 22-23, as amended, are respectfully requested. In addition, dependent claims 3, 5-11, 14-21, 24, 26-32 and 34-41 variously and ultimately depend from these allowable independent claims, and are submitted as being allowable at least on that basis, without further recourse to the patentable features recited therein.

Unpatentability Rejection over Muller and Hosur in View of Tong et al.

Withdrawal of the rejection of claims 11 and 32 under 35 U.S.C. §103(a) as allegedly being unpatentable over Müller in view of Hosur as applied to claims 1, 22, and further in view of Tong et al. (US 6,311,070) ("Tong") is requested. There is no *prima facie* case for unpatentability, particularly in light of the clarifying amendments to independent claims 1, 2, 22, and 23, discussed above.

The Examiner admits that the combination of Müller and Hosur is deficient with respect to providing a teaching or suggestion of selecting a step size from a set of possible step sizes, and asserts that Tong makes up for this admitted deficiency. Whether or not this is true, Tong fails to make up for the deficiencies of Müller and Hosur discussed above with respect to independent claims 1, 2, 22, and 23.

Discussion of Tong and its Deficiencies

According to the Abstract, Tong is purportedly directed to a system and method for controlling transmission power of a mobile unit in a wireless communication system which

minimizes transmission power overshoot caused by counteracting the effects of deep fading. The power control bits are received by the mobile unit then examined on an individual basis and also as a block of bits. Initially, each time a request to increase power is received the mobile unit increases the transmission power by 1 dB. When the mobile unit determines that a predetermined number of bits in a block each indicates a request to increase power is received the mobile unit increases the transmission power by 2 dB. After the block of increase requests, if the mobile receives a request to decrease the transmission power it increases the transmission power by 2 dB, then decreases the transmission power for the next two power control periods by 3 dB each.

Tong fails to remedy the above-identified deficiency of Müller and Hosur because Tong merely discloses a method of controlling transmission power, wherein a mobile unit receives power control bits, each of which being respectively received during a power control period. The mobile unit determines if each of the power control bits indicates that the transmission power should be increased. The mobile unit then increases the transmission power by a predetermined amount each time it determines that one of the power control bits indicates that the transmission power should be increased. Thus, Müller and Hosur, analyzed individually or in combination with Tong, fail to disclose, teach or suggest that the power control information signalled to the first transceiver comprises step-like power control commands configured such that a step size depends on the estimated reliability (claims1 and 22), or that an estimate of at least one probability measure distribution is generated using the probability measures of several received frames, and the power control information is calculated on the basis of the estimated probability (claims 2 and 23).

Accordingly, since the applied art does not teach or suggest all the claimed limitations, reconsideration and allowance of dependent claims 11 and 32 are requested.

Unpatentability Rejection over Muller and Hosur in View of Mitra et al.

Withdrawal of the rejection of claims 15 and 35 under 35 U.S.C. §103(a) as allegedly being unpatentable over Müller in view of Hosur as applied to claims 1, 22, and further in view of Mitra et al. (US 5,732,328) ("Mitra") is requested. There is no *prima facie* case for unpatentability, particularly in light of the clarifying amendments to independent claims 1, 2, 22, and 23, discussed above.

The Examiner admits that the combination of Müller and Hosur is deficient with respect to providing a teaching or suggestion that the reliability estimates enable searching for a step size that optimizes the bit error rate (BER) outage probability, and asserts that Mitra makes up for this admitted deficiency. Whether or not this is true, Mitra fails to make up for the deficiencies of Müller and Hosur discussed above with respect to independent claims 1, 2, 22, and 23.

Discussion of Mitra and its Deficiencies

According to its Abstract, Mitra is purportedly directed to a method for power control in wireless networks for communicating multiple information classes in which the transmission power of a wireless terminal for transmitting a signal representing information of a particular information class to a base station capable of receiving signals for a plurality of information classes is determined based on a probability measure indicating received signal outage durations that would likely occur over a time interval. The transmission power is determined to achieve probable signal outage durations according to the measure that are tolerable for the particular information class to be transmitted. The probability measure is further based on an enhanced characterization of a variation and mean of the detected signal interference magnitude over a time interval. Respective differences in the tolerable signal outage intervals for different information classes, such as voice, audio or video or data, and the corresponding enhanced interference characterization enable transmission of signals representing the information classes at desirably respective low power levels while still providing an acceptable quality of service relative to conventional power control techniques. Such low transmission powers tend to contribute less interference to the communication system and enable greater communication capacity.

Mitra fails to remedy the deficiencies of Müller and Hosur because Mitra merely discloses determining the transmission power of a wireless terminal for transmitting a signal representing information of a particular information class to a base station capable of receiving signals for a plurality of information classes based on a probability measure indicating received signal outage durations that would likely occur over a time interval. Thus, Müller and Hosur, analyzed individually or in combination with Mitra, fail to disclose, teach or suggest that the power control information signalled to the first transceiver comprises step-like power control commands configured such that a step size depends on the estimated reliability (claims1 and 22),

or that an estimate of at least one probability measure distribution is generated using the probability measures of several received frames, and the power control information is calculated on the basis of the estimated probability (claims 2 and 23).

Accordingly, since the applied art does not teach or suggest all the claimed limitations, reconsideration and allowance of dependent claims 15 and 35 are requested.

Unpatentability Rejection over Muller and Hosur in View of Denkert et al.

Withdrawal of the rejection of claims 16-17 and 36 under 35 U.S.C. §103(a) as allegedly being unpatentable over Müller in view of Hosur as applied to claims 1, 22, and further in view of Denkert et al. (US 6,374,117) ("Denkert") is requested. There is no *prima facie* case for unpatentability, particularly in light of the clarifying amendments to independent claims 1, 2, 22, and 23, discussed above.

The Examiner admits that the combination of Müller and Hosur is deficient with respect to providing a teaching or suggestion that the information to be sent in consecutive frames is at least partly similar, and asserts that Denkert makes up for this admitted deficiency. Whether or not this is true, Denkert fails to make up for the deficiencies of Müller and Hosur discussed above with respect to independent claims 1, 2, 22, and 23.

Discussion of Denkert and its Deficiencies

According to its Abstract, Denkert is purportedly directed to a method and system for controlling a transmit power level based upon queue delay for packets in a wireless packet data system. Packet data throughput can be improved for selected links based upon queue delay, *e.g.*, those data packets which have experienced a lengthy queue delay can be provided with a higher quality link by increasing their transmit power. The determination of whether or not to prioritize data packets through increased transmit power can be made based upon, for example, a subscriber's quality of service (QoS) profile.

Denkert fails to remedy the deficiencies of Müller and Hosur because Denkert merely discloses a method and system for controlling a transmit power level based upon queue delay for packets in a wireless packet data system. Thus, Müller and Hosur, analyzed individually or in

combination with Denkert, fail to disclose, teach or suggest that the power control information signalled to the first transceiver comprises step-like power control commands configured such that a step size depends on the estimated reliability (claims1 and 22), or that an estimate of at least one probability measure distribution is generated using the probability measures of several received frames, and the power control information is calculated on the basis of the estimated probability (claims 2 and 23).

Accordingly, since the applied art does not teach or suggest all the claimed limitations, reconsideration and allowance of dependent claims 16-17 and 36 are requested.

Unpatentability Rejection over Muller and Hosur in View of Shah

Withdrawal of the rejection of claims 19-20 and 39-40 under 35 U.S.C. §103(a) as allegedly being unpatentable over Müller in view of Hosur as applied to claims 1, 22, and further in view of Shah (US 6,167,259) is requested. There is no *prima facie* case for unpatentability, particularly in light of the clarifying amendments to independent claims 1, 2, 22, and 23, discussed above.

The Examiner admits that the combination of Müller and Hosur is deficient with respect to providing a teaching or suggestion that a non-parametric estimator is used for generating a reliability measure distribution, and asserts that Shah makes up for this admitted deficiency. Whether or not this is true, Shah fails to make up for the deficiencies of Müller and Hosur discussed above with respect to independent claims 1, 2, 22, and 23.

Discussion of Shah and its Deficiencies

According to its Abstract, Shah is purportedly directed to a system and method of quantifying the degree of balance on forward link and reverse link channels in which the speech quality, *e.g.*, the Bit Error Rate (BER) is analyzed on the forward and reverse links to determine whether the links are balanced. For a target cell, the BER on the forward and reverse links can first be measured. The determination of whether the links in the target cell are balanced depends upon whether the BER percentage is known or only the BER class information is available. If the BER percentage is known, the relative difference of the mean BER on the reverse and

forward links can be compared to determine the degree of the balance. However, if only the BER class is available, the relative distribution of occurrences of the BER classes on the reverse and forward links can be analyzed to determine whether the links are balanced. The analysis of the path balance can also be used to benchmark speech quality balance in cellular systems.

Shah fails to remedy the deficiencies of Müller and Hosur because Shah merely teaches a telecommunications system and method for analyzing the speech quality, *e.g.*, the Bit Error Rate (BER), on the forward and reverse links to determine whether the links are balanced. Thus, Müller and Hosur, analyzed individually or in combination with Shah, fail to disclose, teach or suggest that the power control information signalled to the first transceiver comprises step-like power control commands configured such that a step size depends on the estimated reliability (claims1 and 22), or that an estimate of at least one probability measure distribution is generated using the probability measures of several received frames, and the power control information is calculated on the basis of the estimated probability (claims 2 and 23).

Accordingly, since the applied art does not teach or suggest all the claimed limitations, reconsideration and allowance of dependent claims 19-20 and 39-40 are requested.

Unpatentability Rejection over Muller and Hosur in View of Gatherer

Withdrawal of the rejection of claims 21 and 41 under 35 U.S.C. §103(a) as allegedly being unpatentable over Müller in view of Hosur as applied to claims 1, 22 and 23, and further in view of Gatherer (US 2002/0115463) is requested. There is no *prima facie* case for unpatentability, particularly in light of the clarifying amendments to independent claims 1, 2, 22, and 23, discussed above.

The Examiner admits that the combination of Müller and Hosur is deficient with respect to providing a teaching or suggestion that a non-parametric estimator is used for generating a reliability measure distribution, and asserts that Gater makes up for this admitted deficiency. Whether or not this is true, Shah fails to make up for the deficiencies of Müller and Hosur discussed above with respect to independent claims 1, 2, 22, and 23.

Discussion of Gatherer and its Deficiencies

According to its Abstract, Gatherer is purportedly directed to a wireless communication system that uses soft-input/soft-output (SISO) decoder feedback to produce symbol probabilities for use in wireless communications that utilize single encoder turbo coding and transmit diversity. Coded bits (Y_t) and an interleaved version of the coded bits (X_t) are separately modulated and transmitted. On the receiver side, *a priori* output probabilities produced by a probability generator are combined and then input to a SISO decoder. Combined *a posteriori* output probabilities produced by the SISO decoder are split and then fed back to the probability generator.

Gatherer fails to remedy the deficiencies of Müller and Hosur because Gatherer merely discloses a technique utilized in a wireless communication system, wherein coded bits and an interleaved version of the coded bits are separately modulated and transmitted. Thus, Müller and Hosur, analyzed individually or in combination with Gatherer, fail to disclose, teach or suggest that the power control information signalled to the first transceiver comprises step-like power control commands configured such that a step size depends on the estimated reliability (claims1 and 22), or that an estimate of at least one probability measure distribution is generated using the probability measures of several received frames, and the power control information is calculated on the basis of the estimated probability (claims 2 and 23).

Accordingly, since the applied art does not teach or suggest all the claimed limitations, reconsideration and allowance of dependent claims 21 and 41 are requested.

Conclusion

All rejections having been addressed, Applicant submits that each of pending claims 1-3, 5-11, 14-24, 26-32 and 34-41 in the present application is in immediate condition for allowance. An early indication of the same would be appreciated.

In the event the Examiner believes that an interview would be helpful in resolving any outstanding issues in this case, the Undersigned Attorney is available at the telephone number indicated below.

For any fees that are due, including fees for excess claims and/or extensions of time, please charge Deposit Account Number 03-3975 from which the Undersigned Attorney is authorized to draw. The Commissioner for Patents is also authorized to credit any over payments to the above-referenced Deposit Account.

Date: May 12, 2008

Respectfully submitted,

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